Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 4. This sheet, which includes Figure 4, replaces the original sheet including Figure 4.

Attachment: Replacement Sheet

REMARKS

Claims 1-24 are presented for further examination. Claims 12, 20, 23, and 24 have been amended.

In the Office Action mailed June 1, 2005, the Examiner objected to the drawings because Figure 4 did not have any busses labeled "22a." Applicants are submitting herewith a substitute Figure 4 wherein the first bus labeled "22b" has now been changed to be labeled "22a." No new matter has been added. Approval and entry of this substitute formal drawing is respectfully requested.

Claims 12, 20, 23, and 24 were objected to under 35 U.S.C. § 1.75(a) because of various informalities. More particularly, claim 12, line 1 has been amended to change "to the method of claim 3 ..." to "The method of claim 3 ...." Claim 20, line 1 has the limitation "said first and said second chips" amended to read "said first chip and a second chip." Claim 23, line 5, has the limitation "acquiring and input character string" amended to read "acquiring an input character string." Claim 24, line 8 has the phrase "the electronic document" amended to read "the electronic input document." Claim 24, line 10 has the phrase "its own inputs" amended to read "its own output." No new matter has been added.

Claim 1-19 and 21-24 were rejected under 35 U.S.C. § 103(a) as obvious over "Chaotic Versus Classical Stream Ciphers - A Comparative Study" ("Dachselt") in view of U.S. Patent No. 5,048,086 ("Bianco et al."). Claim 20 was rejected under 35 U.S.C. § 103(a) as obvious over Dachselt in view of Bianco et al. and further in view of Computer Desktop Encyclopedia, Definition of "heat sink," 1998, pp. 1-2 ("Answers").

Applicants respectfully disagree with the bases for the rejections and request reconsideration and further examination of the claims.

The Dachselt article pertains to a self-synchronizing approach in which a scrambler is described in section 3.4. As shown in Figure 2 of Dachselt, the cascading of two chaotic encoders is illustrated, in which both encoders are equal to each other (see the upper diagram) or a filter structure is included (see the lower diagram). In contrast, the claimed invention is directed to dynamically generating a second key through a chaotic generator that

uses a fed-back chaotic system applied to a previously confused document. Dachselt does not disclose or suggest such a structure or process.

Bianco et al., U.S. Patent No. 5,048,086, is directed to an encryption system based on chaos theory that, in essence, is a cryptography technique, which is indicated as prior art in the background portion of the present application. More particularly, Bianco et al. describe at column 5, lines 12-17, the portion noted by the Examiner, a chaotic binary value that is summed with one bit of plain text (the data to be encrypted) on a bit-by-bit basis that continues until the entire message is encrypted. Thus, Bianco et al. teach mixing an input (a non-encrypted, non-confused document) with the chaotic signal. The Examiner's attention is directed to Figures 3 and 4 of Bianco et al., where it is shown that the message is fed to a summer 64 without any preliminary operation. Thus, nowhere do Bianco et al. teach or suggest a preliminary confusion operation on the input, which is in contradiction to the assertion of the Examiner that Bianco et al. discloses "diffusing the confused document by mixing it with the chaotic characters."

More particularly, at column 5, lines 46-56, Bianco et al. describe the use of a "modulo-2 adder 64 that combines the message to be encrypted with a binary value generated by a key stream generator 63 to produce encrypted cipher text. The cipher text is then communicated to the decryption portion of the system 60." Nowhere do Bianco et al. teach or suggest mixing the confused document with a chaotic character as described and claimed in the present invention.

Turning to the claims, claim 1 is directed to a method for protecting the contents of an electronic document that includes confusing characters belonging to an electronic input document through an invertible scrambler to obtain a confused document and diffusing the confused document by mixing it with chaotic characters to obtain an encrypted document. Nowhere does the combination of Dachselt and Bianco et al. teach or suggest the claimed combination. Rather, each of these references teach alternative solutions that are not obviously combinable. There is no prompting, suggestion, or hint present in either of the references to their combination, and in particular to the claimed sequence of first confusing a message through a scrambler and then diffusing the confused document through a chaotic system. Rather, Dachselt and Bianco et al. teach away from the claimed combination by teaching different ways to

increase robustness. More particularly, Dachselt teaches the scheme of Figure 2 and Bianco et al. describe the subsequent application of a domain transformation process accomplished through a 2-stage numerical filter process (see column 4, lines 20-48 of Bianco et al.).

In view of the foregoing, Applicants respectfully submit that claim 1 as well as dependent claims 2-12 are clearly allowable over the combination cited and applied by the Examiner.

Independent claims 13, 21, 22, 23, and 24 are each directed to a respective method or device for protecting the contents of a document that includes scrambling an input document to obtain a confused document and diffusing the confused document to obtain an encrypted document or an encrypted word. In view of the foregoing arguments, Applicants respectfully submit that all of these independent claims and their corresponding dependent claims are allowable over the references cited and applied by the Examiner.

With respect to dependent claim 20, recited therein is the use of a metal layer coating that covers the respective logic control unit, a respective scrambling/unscrambling unit, a respective chaos generator, and a respective secret storage area. Nowhere does this claim recite the use of the metal as a heat shield. The particular aim of this metal layer is increasing the safety of the system and hiding the most sensitive elements on the chip (see page 8, lines 20-24 of the pending specification), not the dissipation of heat, which is meaningless in a system of the present type. In other words, all the elements implement logic functions that do not generate high power. Thus, the citation of a heatsink in the Answer document is not relevant to the present invention.

In view of the foregoing, Applicants respectfully submit all the claims in this application are in condition for allowance. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact Applicants' undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

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ERT:jk
Enclosures:
Postcard
1 Sheet of Drawings (Figure 4)

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